LineUp With Math™ Alignment
Mathematics Grade Level Expectations
March 20, 2006 v.5

Strand: Number, and Operations

Grade-Level Expectations	*LineUp With Math*™ Activities
M(N&O)–5–7 **Makes estimates** in a given situation by identifying when estimation is appropriate, selecting the appropriate method of estimation, determining the level of accuracy needed given the situation, analyzing the effect of the estimation method on the accuracy of results, and evaluating the reasonableness of solutions appropriate to grade level GLEs across content strands.	--Predict and resolve aircraft conflicts and explain results of mathematical calculations and simulations.

Strand: Geometry and Measurement

Grade-Level Expectations	*LineUp With Math*™ Activities
M(G&M)-5-7 **Measures and uses units of measures appropriately and consistently, and makes conversions within systems when solving problems** across the content strands.	--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.
M(G&M)–5–9 **Demonstrates understanding of spatial relationships using location and position** by interpreting and giving directions between locations on a map or coordinate grid (all four quadrants); plotting points in four quadrants in context (e.g., games, mapping, identifying the vertices of polygons as they are reflected, rotated, and translated); and determining horizontal and vertical distances between points on a coordinate grid in the first quadrant.	-- Predict and plot the relative motion of two or more airplanes on given paths.

Strand: Functions and Algebra

Grade-Level Expectations	*LineUp With Math*™ Activities
M(F&A)-5-2 **Demonstrates a conceptual understanding of linear relationships** ($y = kx$) **as a constant rate of change** by identifying, describing, or comparing situations that represent constant rates of change.	--Use an interactive simulator to identify distance, rate, time conflicts in air traffic control problems and resolve the conflicts by varying plane speeds or changing plane routes.

Strand: Problem Solving, Reasoning, and Proof

Grade-Level Expectations 3-5	***LineUp With Math™* Activities**
M(PRP)–5–1 **Students will use problem-solving strategies to investigate and understand increasingly complex mathematical content** and be able to: • Determine the reasonableness of solutions to realworld problems. • Generalize solutions and apply strategies to new problem situations. • Add to the repertoire of problem-solving strategies (e.g., looking for similar problems) and use those strategies in more sophisticated ways. • Solve problems with multiple solutions, recognize when a problem has no solution, and recognize problems where more information is needed. • Translate results of a computation into solutions that fit the real-world problem	--Use an interactive simulator plus calculation worksheets to model and resolve air traffic control conflicts. --Explore and apply a variety of strategies to optimize the solution of air traffic control conflicts.

Strand: Communication, Connections, and Representations

Grade-Level Expectations 3-5	***LineUp With Math™* Activities**
M(CCR)–5–1 **Students will communicate their understanding of mathematics** and be able to: • Discuss mathematical ideas and write convincing arguments. • Understand, explain, analyze, and evaluate mathematical arguments and conclusions presented by others. • Ask clarifying and extending questions related to mathematics they have heard or read about. • Understand and appreciate the economy and power of mathematical symbolism and its role in the development of mathematics. • Demonstrate an understanding of mathematical concepts and relationships through a variety of methods (e.g., writing, graphing, charts, diagrams, number sentences, or symbols). • Use a variety of technologies (e.g., computers, calculators, video, probes) to represent and communicate mathematical ideas.	--Use an interactive simulator plus calculation worksheets to model and resolve air traffic control conflicts. --Predict and resolve aircraft conflicts and explain results of mathematical calculations and simulations.

Grade-Level Expectations 3-5	***LineUp With Math™* Activities**
M(CCR)–5–2 **Students will create and use representations to communicate mathematical ideas and to solve problems** and be able to: • Use physical models and diagrams to represent important mathematical ideas (e.g., multiplication). • Use appropriate representations to solve problems or to portray, clarify, or extend a mathematical idea. • Recognize equivalent representations of concepts and procedures and translate among them as appropriate (for example, understand how the addition of whole numbers, fractions, and decimals are related).	--Use an interactive simulator plus calculation worksheets to model and resolve air traffic control conflicts.